August 29, 2016

Submitted online via CalSAFER

Re: Safer Consumer Products Proposal to List Children's Foam-Padded Sleeping Products containing TDCPP or TCEP as a Priority Product

On behalf of the undersigned organizations, thank you for the opportunity to comment on the Department of Toxic Substance Control's Proposal to List Children's Foam-Padded Sleeping Products containing the flame retardant chemicals TDCPP or TCEP as a Priority Product for the Safer Consumer Products Program. We have no financial interest in any of the products or chemicals which may be the subject of these comments.

Californians for Toxic-Free Fire Safety is a diverse coalition of groups dedicated to improving public health and safety by advocating for non-toxic alternatives to hazardous and untested chemicals. Our coalition participated in the recent process to update California's furniture flammability standard. During this process, the California Bureau of Home Furnishings and Thermal Insulation (BHFTI) exempted juvenile products from flammability regulations because these products do not pose a fire hazard.[1]

We support the Department's proposal to list this product-chemical combination as a priority product. The proposal to list this particular combination is well-supported, as both potential adverse effects and potential exposure are well-established.[2]

However, while addressing TDCPP and TCEP in children's foam padded sleep products is a good step forward, more work must be done. The health concerns reflected in this listing proposal are not limited either to this narrow product category or just these two flame retardant chemicals. In the future, the Department should ensure it has the ability to follow up on additional chemicals of concern in a product category that is the subject of a Priority Product rulemaking. For example, children's sleeping products are not on the current work plan, and the Department cannot continue working on other flame retardant chemicals in children's sleeping products unless it adds the product category to its next work plan or changes the regulations to allow for follow up. Further, the Department should also ensure that it has the ability to focus on and follow up on problematic classes of chemicals across multiple products to make best use of resources as well as make the biggest impact in protecting Californians' health and environment.

Our comments are summarized here and more details are provided below.

1. **We agree that the proposal meets the standards for listing a Priority Product because flame retardant chemicals have the potential to cause adverse health and environmental impacts.** Both TDCPP and TCEP are known to the State of California to cause cancer and studies find that these chemicals have additional hazard traits of concern.
2. **We agree that the proposal meets the standards for listing a Priority Product because there is a large potential for widespread public exposure to the chemicals and children are a sensitive exposed subpopulation.** Flame retardant chemicals, including TDCPP and TCEP, are found in a wide variety of consumer products, including children's sleeping products, and are routinely found in house dust. Sensitive sub-populations including young children are especially vulnerable.

3. **However, the problem is broader than TDCPP and TCEP in children's sleeping products and calls for broader action.** The Department should act swiftly on this product chemical combination and follow up by ensuring that they have the ability to address other hazardous flame retardant chemicals which are associated with health concerns in a broader range of children's products.

DETAILED COMMENTS

1. **We agree that the proposal meets the standards for listing a Priority Product because flame retardant chemicals have the potential to cause adverse health and environmental impacts.**

As the Department's proposal notes, both TDCPP and TCEP are known to the State of California to cause cancer, and research links exposure to these chemicals with additional adverse health effects, including developmental, reproductive, and neurological harm.

Chlorinated Tris or TDCPP was removed from children's sleepwear in the 1970s because it changes DNA.[3] It was listed as a carcinogen under California's Proposition 65 in 2011.[4] Children are more vulnerable to the toxic effects of flame retardant chemicals because their brains and bodies are still developing.

TDCPP and TCEP also have the potential to cause adverse environmental impacts. These chemicals have high aquatic toxicity,[5] are found at high levels in water, and wastewater discharges are connected to indoor flame retardant uses.[6, 7]

2. **We agree that the proposal meets the standards for listing a Priority Product because there is a large potential for widespread public exposure to the chemicals and children are a sensitive exposed subpopulation.**

The Department appropriately cites to a breadth of studies showing human exposures to these two toxic flame retardant chemicals. In addition, studies published after the proposal show that children have significantly higher levels of TDCPP in their bodies compared to adults, and California children have particularly high levels compared to children in other states. [8]

TDCPP and TCEP migrate out of these and other products, collect in air and dust and end up in people. As the Department notes, both TDCPP and TCEP have been widely detected in indoor air and dust, and inhalation and ingestion are major ways the chemicals enter people's bodies. Young children have higher contact with contaminated dust because they crawl, play on the floor, and put their hands in their mouths. Further, it appears that close contact with products containing TDCPP also contribute significantly to children's exposures. [9]

Thus, potential exposures to these flame retardant chemicals impact sensitive subpopulations (such as children pregnant women, infants, and day care center and school employees), which is a special regulatory consideration.[10]

3. **Action must be broader than TDCPP and TCEP in children's sleeping products.**

First, the U.S Environmental Protection Agency identified TCEP, TDCPP, and TCPP as a "cluster" of flame retardant chemicals that have similar health hazards- including cancer and toxicity to the kidneys and liver.[11] This raises concerns for potential cumulative impacts, which DTSC must consider.[12]

In CEH's recent nap mat testing,[13] one mat contained a chlorinated organophosphate flame retardant compound identified as U-OPFR by Dr. Stapleton in her 2011 study on baby products.[14] This flame

retardant contains TCPP as an impurity. In 2016, CEH also completed testing of 27 children's foam products including porta-crib pads, bassinet pads, crib wedges, changing pads, infant carriers (as worn by parents) and found that 25% of the products tested (7 of 27) tested contained flame retardant chemicals. Several products contained TCPP and others contained new flame retardant chemicals or mixtures for which no health data is available.

Furthermore, historically, as human health impacts of specific flame retardant chemicals have been documented, use of these harmful flame retardant chemicals has been phased out. Use then shifts to other chemically similar flame retardant chemicals, many of which present toxicity concerns and/or have inadequate testing to demonstrate they are safe.[15]

The entire classes of brominated, chlorinated and non-halogenated aromatic phosphate chemicals used as flame retardants are all Safer Consumer Products Candidate Chemicals, not just TDCPP and TCEP.[16] Inclusion on the list reflects the chemical's public health importance in California[17] and that it is "known to, or strongly suspected of, adversely impacting human health or development, based upon scientific, peer-reviewed animal, human, or in vitro studies."[18]

The documented substitution problem described above where one toxic flame retardant is replaced with another toxic flame retardant indicates a need for a more comprehensive approach. Moreover, there are many other products in the home, including those intended for children, which contain flame retardant chemicals.

In light of these considerations, we urge the Department to act swiftly, not only to list TDCPP and TCEP in children's foam sleeping products as a priority product-chemical combination, but to broaden the listing or to follow up on it to cover all flame retardant chemicals in children's foam sleeping products. Additionally, we recommend that DTSC expand its rulemaking or follow up on it to cover all flame retardant chemicals in a broader range of children's products, especially those products exempted from the California furniture flammability standard as of January 1, 2014. These products would include high chairs, changing pads, strollers, infant swings, bouncers, hook-on chairs and more.

Given the absence of a flammability standard for most children's products (other than car seats and mattresses), the evidence that these products do not pose a fire risk, and the fact that flame retardant chemicals have a long history of adverse environmental and human health effects, we strongly urge the Department to move to cover all flame retardant chemicals in this broader category of children's products.

The Department should take the broader, more health protective approach to comprehensively address the problem because children, especially in California, have much higher levels of flame retardant chemicals in their bodies.

One of the objectives of the Safer Consumer Products programs is to ask manufacturers to address the question "Is it necessary?" Flame retardant chemicals are not needed in children's products, and as the Department notes, flame-retardant free foam is readily available. Thus, by asking this question for the broader product category we can help eliminate the dangerous practice of toxic substitution where we learn only after decades of harmful exposure that a particular flame retardant "thought to be safe" is in fact, harmful to humans and the environment.

Again, we support the Department on this long awaited action and urge swift and decisive action. We hope this rulemaking will begin a series of important evaluations of chemical product combinations that pose health and/ or environmental threats in California.

Thank you for your consideration of these comments. We look forward to the finalization of the regulation and continuing to work with the Department.

Sincerely,

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[1] BEARHFTI. New Flammability Standards for Upholstered Furniture and Articles Exempt from Flammability Standards: Initial Statement of Reasons. Sacramento, CA: California Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; 2013.

[2] 22 CCR § 69504.1(b)(3)(B); § 69503.3.

[3] Gold MD, Blum A, Ames BN. Another flame retardant, tris-(1,3-dichloro-2-propyl)-phosphate, and its expected metabolites are mutagens. Science (New York, NY). 1978 May 19;200(4343):785–7.

[4] OEHHA. OEHHA Proposition 65 tris(1,3-dichloro-2-propyl) phosphate (TDCPP). Office of Environmental Health Hazard Assessment. 2011

[5] US EPA, 2014. Flame retardants used in flexible polyurethane foam: an alternatives assessment update. US EPA Design for the Environment.

[6] Schreder ED, La Guardia MJ. Flame Retardant Transfers from US Households (Dust and Laundry Wastewater) to the Aquatic Environment. Environmental Science & Technology. 2014

[7] Wei G-L, Li D-Q, Zhuo M-N, Liao Y-S, Xie Z-Y, Guo T-L, et al. Organophosphorus flame retardants and plasticizers: Sources, occurrence, toxicity and human exposure. Environ Pollut. 2014 Oct 4;196C:29–46.

[8] Butt, C.M. et al., 2016. Regional comparison of organophosphate flame retardant (PFR) urinary metabolites and tetrabromobenzoic acid (TBBA) in mother-toddler pairs from California and New Jersey. *Environment International*.

[9] Hoffman, K. et al., 2015. High Exposure to Organophosphate Flame Retardants in Infants: Associations with Baby Products. Environmental Science & Technology, 49(24), pp.14554–14559.

[10] 22 CCR § 69503.3 (a)(2)(A); see also 22 CCR § 69501.1(a)(64): " 'Sensitive subpopulations' means subgroups that comprise a meaningful portion of the general population that are identifiable as being at greater risk of adverse health effects when exposed to one or more chemicals that exhibit a hazard trait and/or toxicological endpoint, including, but not limited to, infants, children, pregnant women, and elderly individuals. 'Sensitive subpopulations' also include individuals at greater risk of adverse health effects when exposed to chemicals because they are either individuals with a history of serious illness or greater exposures to chemicals, or workers with greater exposures to chemicals due to the nature of their occupation."

[11] US EPA 2015. TSCA Work Plan Chemical Problem Formulation and Initial Assessment: Chlorinated Phosphate Ester Cluster Flame Retardants. EPA Document# 740-R1-5001, Office of Chemical Safety and Pollution Prevention.

[12] 22 CCR § 69503.3(a)(1)(C).

[13] CEH, 2016. Testing finds toxic flame retardants are still used in some children's nap mats. Available: http://www.ceh.org/news-events/press-releases/content/frnapmats/

[14] Stapleton, H.M. et al., 2011. Identification of flame retardants in polyurethane foam collected from baby products. Environmental Science and Technology, 45(12), pp.5323–5331.

[15] Stapleton HM, Sharma S, Getzinger G, Ferguson PL, Gabriel M, Webster TF, et al. Novel and High Volume Use Flame Retardants in US Couches Reflective of the 2005 PentaBDE Phase Out. Environmental Science & Technology. 2012 Nov.

[16] 22 CCR §69502.2(a)(2)(F).

[17] http://www.biomonitoring.ca.gov/chemicals/priority-chemicals.

[18] CA Health & Saf. Code § 105440(b)(6).